DOCUMENT RESUME

ED 447 139 SP 039 626

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TITLE Faculty and Student Perceptions of Teaching Styles: Do Teaching Styles Differ for Traditional and Nontraditional Students?
PUB DATE 2000-11-15
NOTE 32p.; Paper presented at the Annual Meeting of the Mid-South Educational Research Association (Bowling Green, KY, November 15-17, 2000).
PUB TYPE Reports - Research (143) -- Speeches/Meeting Papers (150)
EDRS PRICE MF01/PC02 Plus Postage.
DESCRIPTORS Adult Students; College Faculty; College Students; Foreign Countries; Higher Education; *Nontraditional Students; Student Attitudes; Teacher Attitudes; *Teaching Styles
IDENTIFIERS Bahamas

ABSTRACT

This study investigated differences between college faculty members' and students' perceptions of teaching styles and the extent to which faculty employed different teaching styles for traditional and nontraditional students. The study also examined (1) the relationship between instructors' teaching styles and such instructor demographic variables as age, gender, nationality, years of experience, work status, educational level, and type of course facilitated and (2) the relationship between such student variables as age, course taken, academic major, length of attendance, and part-time or full-time status, and perceptions of instructors' teaching style. Respondents were 84 instructors and 585 students (243 traditional and 324 nontraditional). Instructors' perceived teaching styles were measured using the Principles of Adult Learning Scale (PALS). Students' perceptions of their instructors' teaching styles were measured using the Adapted PALS. Data analysis indicated a significant difference between faculty members' and students' perceived teaching styles. There was also a significant difference between the teaching styles of instructors of traditional and nontraditional students. Faculty scored in the teacher-centered ranges of PALS (for both student and teacher ratings). Instructors' educational level and type of course taught related to teaching style. Students' perceptions of teaching style related to academic major and type of course. (SM)

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ED 447 139

FACULTY AND STUDENT PERCEPTIONS OF TEACHING STYLES: DO TEACHING STYLES DIFFER FOR TRADITIONAL AND NONTRADITIONAL STUDENTS?

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A Paper Presented at the Annual Conference of

Mid-South Educational Research Association, Bowling Green, Kentucky, November 2000

SP039626

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Abstract

The primary purpose of this study was to determine whether there were a difference between college faculty's and students' perceptions of teaching styles and the extent to which faculty employed different teaching styles for traditional and nontraditional students at The College of the Bahamas. In addition, the relationship between the instructors' teaching styles and instructor demographic variables such as age, gender, nationality, years of experience, work status, educational level, and type of course facilitated was examined as well as the relationship of students' variables such as age, course taken, academic major, length of attendance, part-time of full-time status to instructors' teaching style.

In the sample of 84 instructors and 585 students, there were 243 traditional students (under age 25) and 324 nontraditional students (25 years and over). Instructors' self-perceived teaching styles were measured by Principles of Adult Learning Scale (PALS). Students perceptions of their instructors' teaching styles were measured by The Adapted Principles of Adult Learning Scale (APALS).

Analysis of the data using an independent measures t test revealed that there was a significant difference between faculty perceived and student perceived teaching styles. There was also a significant difference between the teaching styles of instructors of traditional and nontraditional students. There was a significant relationship between instructor predictor variables and PALS score and there was a significant relationship between students' predictor variables and the students' APALS score. Educational level and type of course taught explained 27.2% of the variance in the instructors' PALS score and 14% of the variance in the students' APALS score was explained by the students' academic major and type of course taken.

INTRODUCTION

Adult learners comprise the fastest growing segment of the college population across the United States. Although adult learners are referred to in the literature by several terms such as *high risk* students, *reentry students*, *adult degree* students, and *the new majority*, among others, the term *nontraditional student* refers to adult students specifically over the age of 25. Just as there is a wide variety of nontraditional students, there is a great diversity of the kinds of institutions that serve them, ranging from vocational technical schools to community colleges and universities. Given the steady growth of the adult student population within higher education, it is important to study the group's characteristics, needs, and perceptions of college teaching, and the extent to which faculty utilize teaching approaches appropriate to adult learners.

Houle (1961) described three types of adult learners: the goal-oriented learners are those who use education as a means of accomplishing fairly clear-cut objectives; secondly, the activity-oriented, are those who participate in learning activities primarily for the sake of the activity itself, or to seek social contact and thirdly, the learner-oriented learners who enjoy learning for its own sake. Sewall (1984) in a study of 1,343 degree-seeking students from six campuses found that the most important reason for continuing education was career-oriented; 42 percent chose personal growth as their primary reason; and less than one percent indicated that their major reason for returning was socially oriented. In Bodensteiner's (1989) survey of college students, career advancement, career change and salary increase, personal growth and development were the key reasons for going to college.

The College of the Bahamas, located on the island of New Providence in the

Commonwealth of the Bahamas, caters to both traditional and nontraditional students. During the last thirty to forty years, rapid changes have taken place economically, socially and politically in the Bahamas. Many persons who entered the Bahamian workforce directly from elementary or secondary schools found they needed to continue their education in order to qualify for the growing job opportunities in banking, tourism and hotel administration, as well as in the established professions of law, accounting and health services. With the influx of adult learners in collegiate classrooms, principles of adult education as the foundation for learning should be evident in the teaching practices of teachers of adult students. It is important to examine the extent to which college faculty employ adult learning principles in their classrooms.

In order to know if one's teaching style makes a difference in student learning, Conti (1990, p. 82) suggested that "teachers must first identify their teaching style and then critically reflect upon the classroom actions related to that style."

Statement of the Problem

Although several studies have been conducted to examine the teaching orientation of faculty in community college and university settings, Studies dealing with the differences in faculty and students' perceptions of teaching styles have revealed conflicting results. There is a dearth of research comparing how traditional and nontraditional students are taught in a college or university setting.

This study addressed the following research questions:

1. Do faculty's perceptions of their own teaching styles, as measured by the Principles of Adult Learning Scale (PALS), differ significantly from the students' perceptions of their instructors' teaching styles, as measured by the Adapted Principles of Adult Learning Scale

(APALS)?

2. Do the teaching styles of instructors of traditional and nontraditional students differ significantly, and are both groups taught from an andragogical or pedagogical perspective?

3. What demographic characteristics, if any, correlate significantly with faculty members' teaching styles, and students' perceptions of faculty's teaching styles?

The primary purpose of this study was to determine whether there were a difference between college faculty's and students' perceptions of teaching styles, and the extent to which faculty employed different teaching styles for traditional and nontraditional students. Additionally, the study sought to determine whether a relationship existed between specific faculty's and students' demographic and personal variables and their perceptions of teaching styles. The researcher's ultimate goal was to help an instructor to identify his or her own teaching style, and the extent to which he or she practices the collaborative mode.

Hypotheses

The following hypotheses served as a guide for this study:

H_1 There is a significant difference ($p \leq .05$) between the perceived teaching styles of instructors at the College of the Bahamas as measured by instructors' PALS score and the student perceived teaching styles of their instructors as measured by the students' APALS score.

H_2 There is a significant difference ($p \leq .05$) between the perceived teaching style of instructors of traditional and instructors of nontraditional students, as measured by the instructors' PALS score.

H_3 There is a significant relationship ($p \leq .05$) between the perceived teaching styles

of instructors as measured by their total PALS' score, and a set of independent instructor variables of age, gender, nationality, years of teaching experience, work status, educational level, and type of course facilitated.

H_4 There is a significant relationship ($p \leq .05$) between student perceived teaching styles of their instructors as measured by the students' total APALS score, and a set of independent student variables of age, gender, course taken, academic major, length of attendance, and part-time or full-time status.

If significance was found in the composite set of independent variables, they would be further analyzed to determine which contribute significantly.

REVIEW OF LITERATURE

Teaching Styles and Adult Learners

The literature of adult education generally supports the idea that teaching adults should be approached in a different way from teaching children. Conti (1989, p.3) stated that "a knowledge of teaching style can make a difference in how teachers organize their classroom, how they deal with learners, and how well their students do in the learning content."

Teaching style has been referred to in many different ways: Darkenwald (1989) defined teaching style as a set of preferred characteristic behaviors in which a teacher engages for the purpose of promoting student learning. Thus, in this perspective, teaching style is differentiated from methods. Instead, teaching style might be viewed as a range of behaviors in which the teacher can operate comfortably according to a certain value system (Conti, 1989). The teacher enters the teaching-learning transaction with a definite set of values which influence the teacher's beliefs about such things as the nature of the learner, the purposes of the curriculum, and the role

of the teacher (Darkenwald & Merriam , 1982).

Many adult educators such as Malcolm Knowles favor an *andragogical* or learner-centered teaching style as opposed to a *pedagogical* or teacher-centered teaching style. Inspired by Lindeman (1926) and other early writers in adult education, Knowles reintroduced the term "andragogy" into American adult education literature in 1968 (although the term has been traced back to 1833, when it was initially coined by Alexander Kapp, a German teacher). Knowles defined andragogy as "the art and science of helping adults learn," and initially, clearly differentiated it from pedagogy, which was defined as "the art and science of how children learn."

In the 1970 edition of The Modern Practice of Adult Education , Knowles contrasted andragogy with pedagogy. He changed this stance in the revised 1980 edition which is sub-titled, "From Pedagogy to Andragogy", implying that he now viewed andragogy and pedagogy on a continuum, instead of as a dichotomy. In these volumes he stated that andragogy differed substantively from pedagogy in four dimensions: self-concept, experience, readiness, and learning orientation. Knowles (1984) changed the initial four characteristics to five and then to six (1989). However, the view expressed by Knowles (1980) is that andragogy is a set of assumptions about learners to be used alongside the pedagogical model of assumptions, thereby testing out the assumptions as to their "fit" with particular situations. This view concurs with that of Brookfield (1986, p. 20) and (Darkenwald and Merriam, 1982, p.14).

Support for the collaborative mode has been traced through the writings of adult educators such as Lindeman (1926), Bergevin (1967), Kidd (1976), Houle (1972), and Freire (1970). These principles are incorporated into the basic assumptions of andragogy, as it was developed by Malcolm Knowles in several books and articles. The collaborative mode is a learner-

centered approach to the teaching learning situation and stresses mutual planning, setting objectives, and evaluation of learning activities in an atmosphere of mutual trust, warmth, respect, and collaborativeness. In addition learning activities are problem-oriented and flexible to match individual styles and preferences.

Andragogy has generated much discussion, debate, refutation and research among adult educators over the last twenty five years. One major part of the andragogy debate questioned whether adults and children are different, and if they are different, do they need two sets of approaches in the teaching transaction? This is an unresolved issue and it is an area where research is limited.

Even though the adult education literature supports the collaborative mode of instruction, strong preference for the teacher-centered mode of instruction exists in community colleges and university settings. This was indicated in the findings of Scotney, 1984, Brooks, 1988, McCann, 1988, Somkaew, 1990, Waters, 1992, Moulton, 1992, and Wilson, 1994. At the college level, teachers vary markedly in what they are trying to accomplish through their teaching. Differences in teaching goals are heavily associated with academic disciplines, but they also vary with personal perceptions of teaching role.

There are no easy answers to the question of which teaching style is best in any given situation. In the final analysis, the teaching style is influenced by the nature of the learner, the teacher, the situation and the content of the curriculum. Situational factors such as the mission of the sponsoring agency, the available facilities, and the allotted time, regulate what can be done. Teachers should be encouraged to examine their own teaching style as this process of analyzing what they do can sensitize teachers to what they are doing and why they are doing it. It can also

help teachers to consider alternatives to what they do and give them a sense of empowerment.

Justification for the Study

Although several studies have been conducted to examine the teaching orientation of faculty in community college and university settings, there is a limited amount of research which compares the perceptions of the teaching-learning transaction from both the instructors' and students' points of view. Students, as regular observers of faculty instruction, can provide reliable evaluations of teaching behaviors, when administered with appropriate instruments. Apart from Beder and Darkenwald (1982) and Gorham (1985) who investigated differences between teaching adults and pre-adults (nontraditional and traditional students), there is a dearth of research comparing how traditional and nontraditional students are taught in a college or university setting. Few studies have compared the perceptions of traditional and nontraditional students to see if teachers are employing different teaching styles with these groups.

A few studies which compared adult students' and faculty's perceptions of effective teaching or teaching style reveal conflicting results. Baum and Brown (1980) found that college students and faculty adopted fundamentally different criteria in evaluating teaching effectiveness. In studies utilizing The Principles of Adult Learning Scale (PALS), differences in faculty's and students' perceptions of teaching style were found by Clow (1986), and Gifford (1992). On the other hand, Brooks (1988) and Mulholland (1996) both found faculty and students had similar views regarding style of teaching. Students in Wilson's (1994) study had similar preferences to the instructional practices of teachers. These differences are enough to warrant further investigation of faculty's and students' perceptions of teaching style as measured by the PALS instrument.

Specific demographic personal variables have been selected for use in this research

because studies have shown a positive interaction between variables such as gender, age, teaching area, and type of student (traditional and nontraditional) and educational orientation or teaching style. Variables such as gender and course characteristics have played a significant role in students' evaluations or perceptions of teaching.

A further justification for this study is its cross-cultural implications. Very few studies have been done outside the United States using the Principles of Adult Learning Scale to assess teaching styles with different ethnic groups. SornKaew (1990) used PALS to assess teaching styles of faculty at a university in Thailand, and Needham (1990) assessed the teaching styles in a Pre-Service teacher training program in Singapore. In both instances, there was a strict adherence to the traditional teacher-centered mode. No such study has been done in The Bahamas, or at The College of The Bahamas which has a cosmopolitan faculty, including people from Canada, the United States, Great Britain, the Caribbean and African States.

METHODOLOGY

The survey technique was used to collect data on a group of traditional students (under age 25) and a group of nontraditional students (over age 25) who are attending classes full-time or part-time at The College of the Bahamas. Data were also collected from the faculty and instructors of courses designed for traditional and nontraditional students.

Participants in the Study

During the Spring Semester 1998, The College of the Bahamas employed 147 full-time faculty and 67 part-time faculty. The faculty sample consisted of 84 instructors representing 39.2% of the total faculty. The instructor response rate was 93.3%. The total student enrollment

for the Spring Semester1998 at The College of the Bahamas was 3114. Of these, 1773 (56.9%) were traditional students (under 25 years of age) and 1341 (43.1%)were nontraditional students (over 25 years of age). Of the 700 students surveyed, the student sample consisted of 585 students giving a response rate of 83.6%. The student sample consisted of 18.8% of the total student enrollment for the Spring Semester. There were 243 (41.5%) traditional students (under 25 years of age) and 342 (58.5%) nontraditional students.

Sample and Procedures

This study was based on a stratified random sample of 585 students and 84 instructors at The College of the Bahamas. The sampling procedure involved selecting a systematic random sample of courses from each of the eight divisions. Courses were selected from the Spring Semester Class Schedule. The names of the instructors were identified by course. Classes were identified according to their instructors.

The faculty who participated in the research completed the PALS instrument and Instructor Information Form. At the same time, their students completed the APALS instrument and the Student Information Form. The data were collected during the Spring Semester, 1998, after the mid-term break at The College of the Bahamas.

Instrumentation

In this study four instruments were used: Two Information Forms, The Instructor Information Form and The Student Information Form which were designed by the researcher, gathered demographic information about instructors and students respectively.

The Principles of Adult Learning Scale (PALS), was used to gather data to assess the teaching styles of faculty and part-time instructors. PALS was developed by Gary Conti in 1978

to measure the degree to which instructors employ certain adult learning principles. PALS is a 44-item Likert-type scale requiring respondents to indicate the frequency with which they practiced the actions described (0=Never, 5 = Always). Scores on PALS a range from 0-220 with a normed mean of 146 and a standard deviation of 20. According to Conti (1985, p. 8), "the score indicates the overall teaching style and the strength of support for this style". A higher score on PALS indicates a learner-centered approach, while a low score indicates a teacher-centered approach.

In order to identify the specific classroom behaviors that make up the individual's teaching style, PALS is divided into seven factors or sub-scales. Factor 1, Learner-centered Activities, Factor 2, Personalizing Instruction, Factor 3, Relating to Experience, Factor 4, Assessing Student Needs, Factor 5, Climate Building, Factor 6, Participating in the Learning Process and Factor 7, Flexibility for Personal Development. (Conti, 1985, p.11). Table 1 displays the values for Principles of Adult Learning Scale sub-scale or factor scores.

Conti (1982) reports that construct validity was established by two separate juries of adult educators. Content validity was established by field tests with adult basic education practitioners, conducted in two phases. Criterion-related validity was confirmed by comparing scores on PALS to the Flanders Interaction Analysis Categories (FIAC) which also measures the constructs of initiating responsive behaviors in the classroom. The reliability of PALS was established by the test-retest method with a group of 23 adult basic education practitioners after a seven day interval. A reliability coefficient of .92 was obtained (Conti, 1978, p. 105). An analysis of 778 cases indicated that the descriptive statistics for PALS are stable.

In order to survey the students' perceptions of their teachers' teaching style, the PALS

instrument was adapted to reflect the student's point of view. Instead of the item reading: "I allow my students. . .," the item reads, " My instructor allows students. . ." The Adapted Principles of Adult Learning Scale was adapted by Clow (1986) who pilot tested the instrument with seven adult students. Since this instrument was being used with a different population, the researcher pilot tested it with a sample of thirty students enrolled at The College of the Bahamas. The Cronbach's alpha was used to test the internal reliability of APALS. An alpha was obtained on the instrument with a coefficient of .89.

Data Analysis

Descriptive statistics were used to analyze the demographic characteristics of faculty and students. The faculty and students' responses were analyzed by an independent measures t-test and multiple regression. The independent measures t-test was used to determine the differences between the students and faculty's perceptions of teaching styles and the difference in teaching styles between teachers of traditional and nontraditional students. Multiple regression analysis was used to determine the relationship between the criterion variable of teaching style and the faculty's and students' predictor variables. Acceptance of the hypotheses was at $p \leq .05$.

RESULTS

Testing of hypothesis I

H_1 There is a significant difference ($p \leq .05$) between the perceived teaching styles of instructors at The College of the Bahamas as measured by instructors' PALS score and the student perceived teaching styles of their instructors as measured by the students' APALS score.

The result of the Independent Samples t -test which was employed to test the differences

between the instructors' PALS score and the students' APALS score indicated that there was a significant difference between the means of the instructors' PALS score and the students' APALS score. The mean score of the instructors was 136.55 with a standard deviation of 13.88. The students' mean score was 120.87 with a standard deviation of 15.38. Therefore the research hypothesis was accepted ($\underline{T}$=8.844; $\underline{df}$ =667; $\underline{P}$ = .0001).

Table 2 gives the instructors' and students' scores for the factors (sub-scales) of the PALS instrument. When the overall scores were compared with the normative scores for the PALS instrument, both faculty's and students' evaluations of teaching styles placed faculty in the teacher-centered or pedagogical ranges of the PALS instrument. However, students rated their instructors as more teacher-centered than faculty rated themselves.

Instructors' and students' perceptions of teaching styles were significantly different at the .001 level of significance in six of the seven sub-scales of the PALS instrument. For Factor 6, Participation in the Learning Process, instructors' and students' scores were basically similar.

Testing of Hypothesis 2

H_2 There is a significant difference ($p \leq .05$) between the perceived teaching style of instructors of traditional and instructors of nontraditional students, as measured by the instructors' PALS score.

There was a significant difference between the means of instructors of traditional students (131.67) and instructors of nontraditional students (139.23). Therefore the research hypothesis was supported ($\underline{t}$ = 2.12; $\underline{df}$ = 66; $\underline{p}$ = .037). Table 2 displays PALS sub-scale scores of instructors of traditional and nontraditional students.

However, when the scores of instructors of traditional and nontraditional students were compared with the normative scores for the PALS instrument, both groups were practicing a

teacher-centered or pedagogical teaching style. The instructors of nontraditional students' scores were clustered closer to the PALS' mean, indicating that these instructors were more situational in their teaching style. Instructors of nontraditional students were more collaborative in Learner-Centered Activities and in Flexibility for Personal Development than instructors of traditional students.

Testing of Hypothesis 3

H_3 There is a significant relationship ($p \leq .05$) between the perceived teaching styles of instructors as measured by their total PALS' score, and a set of independent instructor variables of age, gender, nationality, years of teaching experience, work status, educational level, and type of course facilitated.

The results of the regression analysis indicated that there was a significant relationship between the dependent variable of teaching styles of instructors as measured by the total PALS score and a set of independent variables: age, gender, nationality, years of teaching experience, work status, educational level, and type of course facilitated. Therefore the research hypothesis was supported ($\underline{F} = 2.192$; $\underline{df} = 17,66$; $\underline{p} = .012$). The $\underline{R}$-square was .361 indicating that the set of independent variables explained approximately 36.1% of the variability. Table 4 displays the relationship between the PALS' score and the instructor predictor variables.

When controlling for the other variables in the model, a significant independent relationship was found between PALS' score and the predictor variables of educational level and type of course taught. Educational level explained 14% of the original variance as indicated by the $\underline{R}$-squared change of .140. The type of course facilitated by the instructors accounted for 15.6 of the original variance as indicated by the $\underline{R}$ - squared change of .156.

A revised regression model was developed using only educational level and type of course taught as the variables that were significantly related to teaching styles, as measured by the PALS score. The revised model produced an R -squared change of .272 ($F = 3.505$; $df = 8.75$; $p = .002$). Instructor's course taught and educational level accounted for 27.2% of the variance explained.

Testing of Hypothesis 4

H_4 There is a significant relationship ($p \leq .05$) between student perceived teaching styles of their instructors as measured by the students' total APALS score, and a set of independent student variables of age, gender, course taken, academic major, length of attendance, and part-time or full-time status.

The results of the regression indicated that there was a significant relationship between the dependent variable of students' perceptions of the teaching styles of their instructors as measured by the students' total APALS score, and a set of independent variables: age, gender, course taken, academic major, length of attendance, and part-time or full-time status. Therefore the research hypothesis was supported ($F = 5.308$; $df = 19, 565$; $p = .0001$). The R - squared of .151 indicated that 15% of the variance in the APALS' score was explained in the combination of the predictor variables. Table 5 displays the relationship between the students' APALS' score and the students' predictor variables.

When controlling for the other variables in the model, students' course accounted for 5.2% of the explained variance. This was indicated by the R -squared change of .052. Students' major accounted for 2% of the explained variance. As indicated by the R -squared change of .020

A reduced regression model was developed using only the independent student variables that had a significant relationship to teaching styles as measured by the students' APALS' score.

The revised model produced the R- squared change of 1.38 ($F = 1.217$; $df = 4.565$; $p = .302$). Students' course taken and academic major accounted for 14% of the variance explained.

DISCUSSION

The findings of this study contribute to the body of research in higher education and adult education that examines the efficacy of students' ratings of their instructors. Despite the widespread use and acceptance of students' evaluations in higher education, there are arguments on both sides of the issue. Rotem and Glasman (1979) argued that "students are not competent judges of instructors because they lack experience, knowledge and perspective and because they are affected in their judgement by factors related to the quality of teachers" (p.498). More recently, Marsh (1984), after an extensive review of higher education research on students' ratings of instructors concluded that, "student ratings are quite reliable, reasonably valid, relatively uncontaminated by many variables often seen as sources of potential bias, and are seen to be useful to faculty and administrators" (p.74).

Conflicting views were also reflected in the research literature in adult education. In studies utilizing PALS, differences in faculty's and students' perceptions of teaching styles were found by Clow (1986), and Gifford (1992). On the other hand, Brooks (1988), and Mulholland (1996) both found that faculty and students had similar views regarding style of teaching.

A common factor among these studies utilizing PALS and the present study is that students tended to rate their instructors as more teacher- centered than their instructors rated themselves. A possible explanation for this can be found in the intervening variable of perception. Individual perceptions are influenced by past experiences, preferences, and expectations. It is

possible that students might have rated their instructors by their past experiences in the secondary school, and by their own expectations of what a teacher's role should be rather than by observable behavior alone. Teachers, on the other hand, based on their years of teaching experience and professional training, would interpret their own classroom behaviors from a different perspective.

These examples of intervening variables that may influence the perceptions of both students and instructors, do not negate the validity of either students' evaluations or instructors' self reports. It endorses the idea that both students' evaluations and instructor self-reports should be used to get a more accurate picture of what is actually happening in the teaching-learning transaction.

Another aspect of the findings of this study concerns the instructors' teaching style as measured by the PALS instrument and its sub-scales. The PALS instrument measures support for the collaborative or learner-centered mode of instruction. In the collaborative mode, the learner is involved in setting goals and objectives, and in evaluating their learning. Learning activities capitalize on the learners' experiences and are designed to stress the acquisition of problem-solving skills, to focus on the enhancement of self-concept or foster the development of interpersonal skills (Conti, 1990).

In a teacher-centered or pedagogical approach, the teacher is the authoritarian figure who assigns quiet desk-work; uses disciplinary action when needed; determines the educational objectives and sees himself or herself as a provider of knowledge. There is also limited student involvement in planning objectives, utilizing learners' experiences and evaluation (Conti, 1990).

Although a learner-centered approach is strongly supported in the literature of adult education, a teacher-centered approach is widely practiced in the field as well as in college and

university settings. In a college setting, where faculty must consider situational factors such as the goals of the institution, the availability of facilities, time scheduling and the constraints of the curriculum in terms of certification for credit courses; faculty would have little opportunity to involve students in setting goals and objectives for a course, determining content, or in participating in how the course should be evaluated. Therefore, there are some questions on the PALS instrument which may not apply in a higher education setting and may account for the low scores of faculty and students in this sample.

These findings raise a number of questions: Should college lecturers whose teaching styles place them in the middle ranges of the educational continuum, as measured by PALS, be regarded as not responding to adult learners? Should there be an acceptable mid-range below the PALS' mean that is more in keeping with some of the practices in a higher education setting or other settings such as mandatory continuing education? In these settings curriculum demands and certification preclude more adult involvement in curriculum planning and evaluation, as would be possible in a more unstructured adult education setting. This does not mean that other aspects of andragogy as measured by PALS should not be applied in assessing teaching styles.

There is a dearth of research comparing how traditional and nontraditional students are taught in a college or university setting. The result of the testing of the second hypothesis in this study indicated that there was a significant difference between the instructional practices of faculty who taught traditional students and faculty who taught nontraditional students. Although the faculty's overall scores were in the teacher-centered ranges of the PALS instrument, faculty who taught nontraditional students rated themselves as more situational, whereas the faculty who taught traditional students were more committed to the teacher-centered style.

These findings add a new dimension to the research of Beder and Darkenwald (1982), and Gorham (1985) who investigated differences between teaching adults and pre-adults (nontraditional and traditional students). Both studies found significant differences in teaching styles of adults and pre-adults. "In both studies, the magnitude of reported differences in teaching was highly related to the degree to which adults and pre-adults were perceived as different and to the extent to which the teacher believed he or she should teach different groups differently" (Gorham, 1984, p.76). The findings of this study indicate that college faculty are responding in different ways to the adult and traditional students in their classrooms. However, because of curriculum constraints and other situational variables already mentioned, their teaching style is still teacher-centered. This is in keeping with recent discussions on situational andragogy--both andragogy and pedagogy have a place in teaching both adults and pre-adults.

The findings of the third hypothesis indicated that there was a significant relationship between the instructors' teaching style score and the predictor variables of educational level and type of course facilitated. These findings contribute to the literature regarding subject area specificity and teaching styles. It is interesting to note that when the student predictor variables were analyzed, the student's course and academic major had a significant relationship to the students' perceptions of the teaching styles of their instructors. This highlights the assumption that different subjects require different methodologies and teaching styles (Moulton, 1992; Cranton & Smith, 1986; Erdle & Murray, 1986).

In this study, faculty's educational level had a significant independent relationship with the PALS score. Several studies have suggested that professional training in adult education had a positive effect on the teaching style. Rees (1992) found that scores were higher for faculty

members who had to take education methodology workshops or adult education courses. Instructors of Teacher Education courses at The College of the Bahamas had the highest mean score of 147.87, followed by instructors in Business (139.50) and Humanities courses (139.29). This suggests that teachers with education methodology background tended to be more learner-centered.

CONCLUSION

The results of this study indicate that the collaborative mode as proposed in the adult education literature is not widely practiced in colleges and universities and should not be prescriptive in every setting. Faculty at The College of the Bahamas who participated in this study scored in the teacher-centered ranges of PALS. Even though faculty's and students' perceptions were significantly different, both students' and instructors' ratings placed faculty in the teacher-centered ranges of the PALS instrument. There was also a significant difference between the teaching styles of instructors of traditional and nontraditional students. Instructors' educational level and type of course taught had a relationship to teaching style. Students' perceptions of teaching style had a relationship to academic major and type of course. This is a strong indication that teaching style may vary across disciplines.

The andragogical and pedagogical models of assumptions as proposed by Knowles (1980) can be used according as they "fit" particular situations. "Furthermore, the models are probably most useful when seen not as dichotomous but rather as two ends of a spectrum, with a realistic assumption in a given situation falling in between the two ends" (Knowles 1980, p. 43).

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APPENDIX

Table 1

Principles of Adult Learning Scale Factor (Sub-Scale) Score Values

Factor	Items	Mean	SD
1 Learner Centered Activities	12	38	8.3
2 Personalizing Instruction	9	31	6.8
3 Relating to Experience	6	21	4.9
4 Assessing Student Needs	4	14	3.6
5 Climate Building	4	16	3.0
6 Participating in Learning Process	4	13	3.5
7 Flexibility for Personal Development	5	13	3.9

Table 2

Instructors' and Students' Factor (Sub-Scale) Scores
(Students N=585, Instructors N=84).

Seven Factors	Instructors		Students		t-value
	Mean	SD	Mean	SD	
1. Learner Centered Activities	41.91	6.54	37.32	8.0	5.0 **
2. Personalizing Instruction	23.52	4.39	21.26	5.27	3.74 **
3. Relating to Experience	20.05	4.56	17.33	5.89	4.06 **
4. Assessing Needs	13.36	2.94	11.48	4.15	4.02 **
5. Climate Building	13.86	2.56	11.51	3.57	5.83 **
6. Participation in Learning Process	10.49	3.09	10.21	3.96	.63
7. Personal Development	13.36	3.55	11.75	3.56	3.88 **

Note: ** $p \leq .01$

Table 3

PALS' Factor (Sub-scale) Scores of Instructors of Traditional and Nontraditional Students
(Instructors of Traditional Students N = 27; Instructors of Nontraditional Students' N = 41)

Seven Factors	Student Type Traditional		Student Type Nontraditional		t-value	
	Mean	SD	Mean	SD		
1. Learner-Centered Activities	39.31	5.73	42.96	6.25	-2.43	**
2. Personalizing Instruction	24.06	4.70	25.82	3.88	-1.68	
3. Relating to Experience	20.37	4.5	19.27	5.89	.92	
4. Assessing Needs	13.93	3.06	13.20	2.61	1.05	
5. Climate Building	13.04	2.36	14.12	2.75	-1.68	
6. Participation in Learning Process	10.54	3.20	11.27	3.09	-.94	
7. Personal Development	12.20	3.73	14.22	3.50	-2.26	**

Note. ** $p \leq .01$

Table 4

Relationship Between PALS' Score and the Instructor Predictor Variables

Source		df	df change	F change	R^2	R^2 change
Full Model- Regression		17	-	2.192 *	.361	-
Removing	Course	11	6	2.691	.205	.156*
"	Ed. level	15	2	7.230	.221	.140**
"	Gender	16	1	.049	.360	.0001
"	Nation	16	1	.845	.353	.008
"	Years Exp.	15	2	1.722	.361	.033
"	Status	16	1	.075	.360	.001
"	Age	13	4	.388	.361	.015
Residual		66				
Total		83				

Note. ** $p \leq .01$

* $p \leq .05$

Table 5

Relationship Between APALS' Score and the Student Predictor Variables.

Source	df	df change	F change	R^2	R^2 change
Full Model-Regression	19	-	5.308**	.151	-
Removing Course	13	6	5.816	.099	.052**
" Major	13	6	2.168	.132	.020*
" Gender	18	1	1.410	.149	.002
" Length of Attendance	18	1	1.499	.149	.002
" Status	18	1	.002	.151	.0001
" Age	15	4	1.217	.151	.007
Residual	565				
Total	584				

Note. ** $p \leq .01$

* $p \leq .05$